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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,203

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Marc Chenu-Tournier

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EXAMINER

TRAN, KHANH C

ART UNIT

PAPER NUMBER

2611

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/580,203	<b>Applicant(s)</b> CHENU-TOURNIER, MARC	
	<b>Examiner</b> KHANH C. TRAN	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is **non-final**.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. Claim(s) **1** is/are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim recites determining a quality information and processing the information, the claim neither transforms underlying subject matter nor positively ties to another statutory category that accomplishes the claimed method steps, and therefore, does not qualify as a statutory process.

The claimed method fails to positively recite any method steps, and merely recites determining, processing and obtaining qualitative information on the encoded bits. The claim language is sufficiently broad as to read on a sheet of paper that one can determining, processing and obtaining qualitative information on the encoded bits. The actions could all be performed without a machine.

2. Claims 2-6 are also rejected because of dependency on rejected claim 1.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 4-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4-6 provide for the use of a method as claimed in claims 1-3, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 4-6 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).


***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mills et al. U.S. Patent 6,704,376 B2.

Regarding claim 1, in column 11 lines 30-36, Mills et al. teaches in FIG. 1, a number of users (1-K) generate signals that are sent by transmitters 10 into free space. The various signals are received at antennas (1-p) 20, wherein there is one signal for each polarization feed. The signals represent directly received signals 30, as well as multi-path signals 40 from the same user, and interfering signals 50 from other users.

In column 12 line 60 via column 13 line 10, see also FIG. 1, the MUD detector 210 is a full-complexity  detector, which passes soft decisions in the form of reliability, or confidence, measures to the single user decoders 220.

Mills et al. does not expressly disclose a qualitative information as claimed in the application claim.


However, as further disclosed in column 12 line 60 via column 13 line 10, because the reliability measures are presented with one associated with each symbol of each user to the bank of SU decoders 220, in view of that, one of ordinary skill in the art at the time the invention was made would have recognized that the reliability measures correspond to the quality information claimed.

In column 15 lines 15-30, see also FIG. 3, Mills et al. further discloses that process is done for each user and all symbol intervals and provides K streams of reliability measures or soft estimates of the symbols, one stream of soft symbol decisions for each user is passed in time-ordered form to a bank of single-user

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decoders 340. Single user decoders 42 use the information as a priori information and output conditional probabilities that are then fed back to the ordering unit 310.

The output of the multi-user detector is a series of best guesses as to what the particular decoded bit should be. These guesses are the result of the application of various assumptions in the multi-user detection algorithm based upon prior expected knowledge of the signals.

Regarding claim 2, as recited in claim 1 rejection, the MUD detector 210 is a full-complexity  detector.

Regarding claim 3, Mill et al. does not disclose the quality information is fairly constant.

As recited in claim 1 rejection, Mills et al. further discloses that process is done for each user and all symbol intervals and provides K streams of reliability measures or soft estimates of the symbols, one stream of soft symbol decisions for each user is passed in time-ordered form to a bank of single-user decoders 340. Single user decoders 42 use the information as a priori information and output conditional probabilities that are then fed back to the ordering unit 310.

The output of the multi-user detector is a series of best guesses as to what the particular decoded bit should be. Because Mills et al. teachings are iterative and the output conditional probabilities are then fed back to the ordering unit 310, one of

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ordinary skill in the art would have recognized that the soft estimates of the symbols are fairly constant.

Regarding claims 4-6, in column 2 lines 45-50, Mills et al. discusses in operation, a plurality of spread information signals, such as binary phase shift keying (BPSK) or quadrature phase shift keying (QPSK) modulation are employed.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Reshef U.S. Patent 6,529,559 B2.

Pan et al. U.S. Patent Application Publication No. 2006/0146755 A1.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHANH C. TRAN whose telephone number is (571)272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCT

***/KHANH C. TRAN/  
Primary Examiner, Art Unit 2611***